

SCREENING AND DIAGNOSIS OF BLUNT CEREBROVASCULAR INJURY (BCVI)

Obtain computed tomographic angiogram (CTA) of the neck and base of skull using 16 slice or greater multidetector array scanner in any of the following:

1. Neurologic deficit not consistent with head CT
2. Ischemic stroke on CT or MRI
3. Focal neuro deficit: TIA, hemiparesis, vertebrobasilar syndrome, Horner's syndrome
4. Arterial hemorrhage from neck, nose or mouth
5. Expanding cervical hematoma
6. Cervical bruit in pt. younger than 50 yrs.
7. GCS \leq 8
8. All skull base fractures (includes petrous temporal, sphenoid, occipital, occipital condyle, ethmoid) and any fracture involving a carotid canal
9. Any C1, C2 or C3 fracture, excluding type I and II dens fractures from ground level fall
10. C-spine fractures through any transverse foramen
11. C-spine fractures with subluxation or rotational component
12. Any c-spine fracture associated with a thoracic or lumbar spine fracture
13. Cervical ligament injury
14. Lefort II or III fracture
15. Near hanging with anoxia
16. Thoracic great vessel injury (aorta, brachiocephalic, carotid, subclavian arteries)
17. Mandible fractures from high energy force (e.g. MVC, MCC, fall > 2 M, etc.; not punches)

If BCVI is noted on CTA contact the neuro-interventional radiologist immediately for further recommendations regarding treatment, repeat imaging and follow-up.

References:

1. Bromberg WJ, Collier BC, Diebel LN, et al. Blunt cerebrovascular injury practice management guidelines: The Eastern Association for the Surgery of Trauma. *J Trauma* 2010;68:471-477.
2. Biffi WL, Moore EE, Offner PJ, et al. Optimizing screening for blunt cerebrovascular injuries. *Am J Surgery* 1999;178:517-522.
3. Burlew CC, Biffi WL, Moore EE, et al. Blunt cerebrovascular injuries: redefining screening criteria in the era of noninvasive diagnosis. *J Trauma* 2012;72(2):330-335.
4. Franz RW, Willette PA, Wood MJ, Wright ML, Hartman JF. A systematic review and meta-analysis of diagnostic screening criteria for blunt cerebrovascular injuries. *J Am Coll Surg*. Mar 2012;214(3):313-327.
5. screening criteria in the era of noninvasive diagnosis. *J Trauma Acute Care Surg*. Feb 2012;72(2):330-335
6. Cothren CC, Moore EE, Ray CE Jr, et al. Screening for blunt cerebrovascular injuries is cost effective. *Am J Surgery*. 2005;190:845-849.
7. Cothren CC, Moore EE, Biffi WL, et al. Cervical spine fracture patterns predictive of blunt vertebral artery injury. *J Trauma*. 2003;55:811-813.
8. Nagpal P, Policeni BA, Bathla G, et al. Blunt cerebrovascular injuries: advances in screening, imaging and management. *Am J Neuroradiology*. Oct 2017.
<http://www.ajnr.org/content/ajnr/early/2017/10/12/ajnr.A5412.full.pdf> Accessed 31July2018.